

REMARKS

Claims 1-6 are pending in the present application. The Office Action and cited references have been considered. Favorable reconsideration is respectfully requested.

The disclosure was objected to because there was a typographical error in the amendment to page 1, line 17. This error has been corrected. Withdrawal of the objection is respectfully requested.

Claims 1-6 were rejected under 35 U.S.C. §112, second paragraph. Claim 1 has been amended to remove the phrase “in particular”. Withdrawal of this rejection is respectfully requested.

The specification and claim 1 have been amended to correct the German translation of two phrases: “fixed combs” and “previously bent.” The phrase “fixed comb” has been changed to “top comb”, which is the technically correct term, and also the correct English translation of the German expression “Fixkamm”, which was used in the priority application. The phrase “previously bent” is an incorrect translation of the German term “vorgebogen” used in the German priority document, which means “bent forward”. This type of bend can be clearly seen in Fig. 4. Applicant respectfully submits that no new matter has been entered by these changes.

Claims 1-6 were rejected under 35 U.S.C. §102(b) as being anticipated by Patelke (U.S. Patent 5822972). This rejection is respectfully traversed for the following reasons.

Claim 1 recites a top comb configured to be used on textile combing machines, comprising a plurality of needles which are arranged adjacent to each other, each needle comprising a foot section and a tip section, and a free opening area formed between the tip

sections of adjacent needles, in which the fibres to be combed can penetrate during combing, wherein the needles are produced by punching, at least the front end of the tip section is angular or bent forward, and the needle density is ≥ 33 needles per cm. This is not taught, disclosed, or made obvious by the prior art of record.

Patelke teaches an air curtain nep separation and detection device comprising a toothed rotating cylinder that receives the fiber sample and impacts and propels at least a portion of the trash and neps along an ejection path. Further, an air curtain is directed toward and passed across a portion of the toothed surface of the rotating cylinder. Though the teeth disclosed by Patelke protrude at an angle from the cylinder, each tooth is straight, with no bent portions.

In contrast, the device according to amended claim 1 is directed to a top comb configured to be used on textile combing machines comprising a plurality of needles which are arranged adjacent to each other, whereby each needle comprises a foot section and a tip section, and a free opening area formed between. The free opening area 5 is shown in Fig. 2.

Patelke is not directed to a top comb. The Examiner's argument on page 3 that the phrase "for fixed combs" provides only intended use is moot, in view of the amendment to claim 1, which now recites a top comb configured to be used on textile combing machines, which as discussed above, is the technically correct term for a "fixed comb".

Further, Patelke provides no disclosure with respect to the configuration of the teeth. It is only said that the teeth 11 on the cylinder 10 are preferably raked at an angle of about 9 degrees forward of the direction of rotation (see column 4, line 55), i.e., as seen in Fig. 1, they protrude from the cylinder at an angle. But each tooth is straight. There is no disclosure or suggestion that they have a foot section and a tip section, that at least the front end of the section is angular or bent forward, or that there is a free opening area between separate tip section.

In column 5, starting in line 17, it is described that the neps of the fiber are propelled away by the force of impact with the teeth 11. In fact, Patelke states that "this apparatus, ... would not typically be appropriate for a device that was used for processing sellable fibers in a production environment. Therefore, an apparatus according to the present invention is designed more for testing fiber samples for neps, and less for separating good fibers from the other components of the fiber sample." Col. 5, lines 10-16. Accordingly, one of ordinary skill in the art would not look to Patelke to solve the problems one would encounter in designing a needle set that "enables a high combing standard, on the one hand, ensuring that any impurities in fibre hands made of cotton or wool are reliably removed, and that the fibres are cleanly parallelized." Specification, page 1, lines 12-15.

Further, there is no disclosure that the needles are produced by punching, which renders it possible to produce the configuration as shown in Fig. 4, namely, at least the front end of the tip section is angular or bent forward, and the needle density claimed can work in a needle set in the claimed combination. The Examiner argued that

[i]n view of the similarities between the claimed process, i.e. 'produced by punching', and that of the prior art of Patelke, it is reasonable to believe that the product made by the prior art process would be either identical to or only slightly different from the claimed product. In such a situation, the burden of proof shifts to applicant to prove that the claimed product is materially different.

Applicant respectfully submits that as discussed above, the needles of Patelke are clearly straight and not angular or bent forward, as recited in claim 1. Therefore, the needles of Patelke are likely to have been manufactured, either cut from a wire or embossed. In contrast, the claimed needles are angular, or bent forward, a structure which cannot be manufactured using the standard manufacturing techniques. Instead, the angular or bent forward needles are

manufactured by punching, as recited in claim 1.

The above distinguishing features of claim 1 as applied to a top comb according to amended claim 1 show a number of advantages and features.

a) Top combs are provided with just one row of needles whereas combing cylinders are provided with a number of rows of needles one after the other. Therefore, the one-needle row of the top comb must show the same performance as the number of rows of a combing cylinder.

b) Top combs in combing machines are known for more than a hundred years and the configuration and arrangement of the needles has been the object of numerous attempts for improvement. The embodiment according to the invention was never before used in a top comb, thus solving a long felt need for an improved needle set.

c) The higher density of the needles according to the invention results in a higher impact on each of the needles so that someone skilled in the art would have expected at the time of the invention, that the known density of needles would have constituted an upper limit in devices such as the top comb of Applicant's claimed combination. That is, until Applicant's claimed invention, one of ordinary skill in the art would not have expected a top comb having a density of greater than or equal to 33 needles per centimeter, to work. According to the invention, it was recognized that by using a smaller deformation during production materials with a high friction resistance can be used like chrome-vanadium-steel-alloys, which can resist even the resulting impacts if a higher density of needles is used.

d) Someone skilled in the art also would have expected that the free regions between the needles would fully or partially be closed after some time of operation. However, Applicant has unexpectedly determined that as the needles used according to the invention are

produced by modern stamping techniques, the lateral planes of the needles are exactly parallel to each other and to neighboring needles so that a jam and closing of the free space is avoided.

e) Someone skilled in the art further would have expected that due to the higher needle density in a top comb according to the invention, the needles would not fully penetrate into the fibers so that part of the fibers would not be combed completely. Due to the inventive configuration of the tips, nevertheless the full width and depth of the fibers is engaged and combed, even with modern high speed machines.

f) The higher needle density with an inventive top comb provides a full combing and a high parallelism of the fibers and further impurities and short fibers are withheld and can be removed.

g) The top comb according to the invention provides an excellent combing performance and lifetime as well, which is contrary to all expectations of the ordinarily skilled artisan at the time of the invention.

h) If one assumes a fiber density of a thousand fibers/cm and a needle density according to the prior art of, e.g., 23 needles/cm between two neighboring needles, 43 fibers can be found, whereas according to the inventive needle density of, e.g., 38 needles/cm, only 26 fibers can be found. This means that much more impurities can be combed out and that each fibre is treated more extensively, providing significantly unexpected and improved results.

For at least these reasons, Applicant respectfully submits that claims 1 is patentable over the prior art of record.

Claims 2-6 depend from and include the recitations of claim 1. Applicant submits that these claims are patentable at least for the reasons discussed above with the respect to claim 1.

Appln. No. 10/576,711
Amdt. dated April 7, 2008
Reply to Office action of January 7, 2008

In view of the above amendment and remarks, Applicant respectfully requests reconsideration withdrawal of the outstanding rejections of record. Applicant submits that the application is in condition for allowance and early notice to the effect is most earnestly solicited.

If the Examiner has any questions, he is invited to contact the undersigned at 202-628-5197.

Respectfully submitted,

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